

Dr. David M. Eisenstadt

Preliminary Opinions

Woodruff et al. v. HPH et al.

May 13, 2006

1. Pediatric hematology-oncology services are a distinct product.
 - a. Pediatric hematology-oncology services are provided to individuals usually under the age of 17 or 18 diagnosed with actual or suspected cancer or blood disorders.
 - i. Typical types of cancer occurring in this age population are neuroblastoma (cancer of the nervous system), leukemia, osteosarcoma, lymphoma, and brain tumors.
 - ii. Typical blood disorders occurring in this age population are aplastic anemia (bone marrow stops working), hemophilia, and inherited anemias.
 - iii. Pediatric hematology-oncology services consist of two components, professional services, and technical or facility services.
 - (1) Virtually all pediatric hematology-oncology patients require both professional and facility services during the course of treatment.
 - (2) The professional component of pediatric hematology-oncology care is provided by physicians or ancillary personnel under the supervision of physicians.
 - (a) The vast majority of pediatric hematology-oncology physicians' services is provided by board certified pediatric hematologists-oncologists.
 - (i) The vast majority of children diagnosed with cancer in Hawaii are treated under Childrens' Oncology Group (COG) protocols.
 - (ii) Treatment under COG protocols must be provided by a board eligible or board certified pediatric hematologist-oncologist.
2. Hematology-oncology physicians' services provided to patients with pediatric cancer or blood disorders is a relevant product market.
 - a. The types of cancers which occur in the pediatric population are different than the types of cancers which occur in the adult population.

EXHIBIT 1

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- i. Case management of pediatric cancer cases is different than case management of adult cancers.
 - (1) Drugs are different
 - (2) Nursing care is specialized and different
 - ii. Oncologists providing care to adults (individuals with cancer over age 18) are not a substitute for pediatric hematology-oncologists.
 - (1) Adult oncologists lack the requisite experience and/or interest in treating these types of cancers.
 - (2) Adult oncologists in Hawaii prefer to not treat children with forms of pediatric cancer.
- 3. The technical component of pediatric hematology-oncology care, provided by hospitals which are open to the general public, is a relevant product market.
 - a. In Hawaii, the vast majority of pediatric hematology-oncology technical services is provided by pediatric tertiary care hospitals.
 - i. These facilities offer specialized nursing and other ancillary services specifically required by children.
 - (1) Board certified pediatric hem-onc physicians practice at these institutions, and generally do not practice at adult general acute care hospitals.
- 4. Pediatric hematology-oncology relevant geographic markets
 - a. Pediatric hematology-oncology physicians' services provided by Hawaii pediatric hematology-oncologists comprise a relevant product market.
 - i. The (percentage) outflow of Hawaii pediatric hematology-oncology patients to the mainland United States for pediatric hematology-oncology physician services is very small.
 - ii. Obtaining pediatric hematology-oncology care on the mainland requires more than an occasional visit to a mainland doctor or facility.
 - (1) Completion of most pediatric cancer treatment regimens would necessitate a move to the mainland for an extended period. This

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would dictate relocation by both the patient and usually at least one parent or responsible party.

- (2) Third-party payers doing business in Hawaii do not reimburse families for the cost of re-locating to the mainland.
- (3) Third party payers doing business in Hawaii do not specifically contract with mainland facilities for most types of hematology-oncology care.
- (4) Third party payers doing business in Hawaii do not condition their payment of benefits on the use of mainland facilities for almost all types of hematology-oncology care.
- (5) Re-locating to the mainland often requires that one or both Hawaii parents quit their jobs.
- (6) The out-of-pocket cost of travel and re-location expenses, as well as the amount of lost job earnings, makes it prohibitively expensive for most Hawaii families to substitute mainland pediatric hematology-oncology physicians for Hawaii pediatric hematology-oncology physicians.
- (7) Mainland facilities have refused to make their COG protocols available to patients who are treated in Hawaii hospitals.

iii. Only two significant groups of board certified pediatric hematology-oncology physicians, HCBCG and KMS, provide services to the general pediatric hematology-oncology population.

- (1) Physicians who are not members of these two groups who provide pediatric hem-onc services to the general public are not significant providers of pediatric hematology-oncology services to the general public.
 - (a) They may not be board certified.
 - (b) If they are not board certified or board eligible, they cannot administer COG protocols.
 - (c) They are occasionally pediatricians who practice on the outer islands and who receive instruction from KMCWC board certified hematologists-oncologists to deliver certain

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hem-onc services, such as chemotherapy, to their patients.

- (d) Kaiser-employed hematology-oncology physicians are not a significant competitive constraint on KMCWC's hematology-oncology physicians.
 - (i) Dr. Dougan, the Kaiser-employed physician based at Kaiser Moanalau, treats only Kaiser enrollees.
 - (ii) Dr. Dougan is neither board certified nor board eligible and therefore is unable to administer COG protocols. This limits Dr. Dougan's ability to compete against the pediatric hem-onc physicians practicing who practice at KMCWC, even for the care of Kaiser patients.
 - (iii) Kaiser Moanalua Hospital accepts only Kaiser-insured pediatric hematology-oncology patients. Therefore, Dr. Dougan treats only Kaiser patients and he does not treat pediatric hematology-oncology patients enrolled in other third party payment plans.
 - (iv) Kaiser Moanalau hospital lacks the specialized nurses to provide certain types of pediatric hematology-oncology care. Only hematology-oncology physicians practicing at KMCWC have access to that level of specialized nursing support services. Again, this limits the ability of providers such as Dr. Dougan to compete with the pediatric hem-onc doctors who practice at KMCWC.
- (e) Tripler-employed pediatric hematology-oncology physicians are not a significant competitive constraint on the pediatric hem-onc physicians who practice at KMCWC.
 - (i) Tripler hospital does not treat children or adolescents of non-military families.
 - (ii) Tripler hospital does not offer certain advanced types of pediatric-hematology physicians' services.

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- b. Hawaii hospitals who provide pediatric hematology-oncology technical services to Hawaii residents constitute a relevant product market. KMCWC provides the vast majority of pediatric hematology-oncology hospital services offered to the general Hawaii public.
 - i. As noted, the outflow of Hawaii pediatric hematology-oncology patients to mainland hospitals for pediatric hematology-oncology facility services is very small.
 - ii. As discussed below, KMCWC discharges almost all of the pediatric hematology-oncology hospital patients treated in Hawaii.
- 5. Combined, HCBCG and KMS pediatric hematology-oncology physicians account for the vast majority, probably in excess of 90 percent, of the pediatric hematology-oncology physicians' services provided to pediatric hematology-oncology patients who are neither military dependents nor Kaiser enrollees.
 - a. Shares of pediatric hem-onc physician firms should correlate closely with the facility shares of the hospitals at which those firms practice. That is, hem-onc physician firms practicing at KMCWC are likely to possess a combined share of pediatric hem-onc physicians' services which is roughly the same as KMCWC's facility share (see discussion below).
 - b. Between the two groups, HCBCG and KMS's hematologist-oncologists, HCBCG possesses a 38 percent share and KMS possesses a 62 percent share.
- 6. Kaploli Medical Center for Women and Children (KMCWC) possesses at least a 90 percent market share of hematology-oncology facility services which are provided to non-pediatric patients who are not military dependents or enrolled in Kaiser.
 - a. Kaiser Moanalau is not an alternative to KMCWC for patients who do not have Kaiser insurance, and in many circumstances during the relevant period was not a suitable site of treatment even for Kaiser patients.
 - i. Kaiser Moanalau does not provide intrathecal chemotherapy to Kaiser patients.
 - b. Tripler is not an alternative for patients who are not military dependents.
 - c. During the relevant period, Kaiser Moanalua Hospital lacked specialized nursing staff capable of treating pediatric hematology-patients who require certain types of procedures.

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- d. Hawaii general acute care hospitals which treat the general public, other than KMCWC, account for a very small share of pediatric hematology-oncology inpatient hospital services provided to patients.
 - i. Kaiser estimates KMCWC's share at 99 percent.
 - ii. KMCWC estimates its own share at 99 percent.
 - iii. I estimate KMCWC's share of non-Kaiser, non-Tripler discharges to be in excess of 90 percent.
 - e. Even if Kaiser Moanalula Hospital is counted as an actual competitor to KMCWC, which it should not be as it is not an alternative available to the general public, I estimate that KMCWC's share of pediatric hematology-oncology discharges is still in excess of 80 percent.
7. Adult hospitals are not likely potential entrants into the provision of pediatric hematology-oncology facility services.
- a. Queens Medical Center is not a likely potential entrant.
 - b. The Cancer Research Center of Hawaii (CRCH) is neither an immediate likely entrant nor a likely future potential entrant into the provision of facility services for pediatric hematology-oncology services.
 - i. CRCH lacks hospital facilities.
 - ii. The earliest date by the CRCH would have physical hospital facilities is 2008.
 - iii. Even if CRCH eventually obtains its own facility, it is more likely than not to continue to contract with KMCWC for pediatric hematology-oncology facility services.
8. KMCWC has exercised monopoly power:
- a. Market power is the ability to raise price above competitive levels or exclude competition.
 - i. HPH has adversely impacted plaintiffs' ability to succeed as a competitor to KMS.
 - (1) Through control of new patient referrals made by HPH employees.

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- ii. HPH charges high facility fees to HMSA and Kaiser.
9. During the period May 2001 to April 2002, HPH's investigation and subsequent disciplinary treatment of Drs. Wilkinson and Woodruff appears over-reaching and was possibly pre-textual.
- a. Background
 - i. In the September 2001 Voluntary Disclosure Submission compliance counsel (and D&T) took the position that:
 - (1) the attending physician must personally perform the procedure¹ to legally submit a bill (HCFA or CMS 1500) for payment by Medicare or Medicaid.
 - (2) They based this conclusion on the following:
 - (a) The ancillary provider, in this case nurse practitioner Dianne Fochtman, was alleged to have personally performed a large number of the four procedures in question. She was an employee of the hospital, not a KMS employee. Because she was not a KMS employee, the KMS hematology-oncology physicians could not professionally bill for services she rendered, even if they supervised her administration of these procedures.
 - (b) Medicare's "incident to" billing rules, which permit the physician to bill for services performed by a properly supervised (physician must be on the premises) employee of the physician, do not apply.
 - (c) Since the "incident to" billing rule does not apply, (e.g., it does not apply because the nurse practitioner was not an employee of KMS) compliance counsel and D&T determined that billing was warranted and lawful only if the KMS physician personally performed the invasive part of the procedure.

¹The relevant procedures at issue are: lumbar puncture, bone marrow aspiration, bone marrow biopsy, and administration of chemotherapy through the central nervous system (intrathecal chemotherapy).

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- ii. Plaintiffs intend to demonstrate that defendants reliance on their interpretation of the Medicare Part B billing rules was pre-textual for some or all of the following reasons.
 - (1) Defendants' may have inaccurately rejected the proposition that Diane Fochtman and the KMS hematology-oncology doctors were employed by a common legal entity.
 - (a) The Voluntary Disclosure statement references the Medicare Carriers Manual, §2050.1C, as indicating that common employment is established when the non-physician performing an "incident to" service is employed by the same legal entity as the supervising physician.
 - (b) When physician and ancillary personnel are employed by the same legal entity, Medicare Part B rules permit the physician to bill for services performed by duly licensed and properly supervised ancillary personnel.
 - (c) In this case:
 - (i) DF was an employee of Kapiolani Health and KMCWC.
 - (ii) KMCWC was a subsidiary of Kapiolani Health during the relevant period.
 - (iii) KMS was a subsidiary of Kapiolani Health during the relevant period.
 - (iv) The CEO of KMCWC was also the president of KMS during the relevant period.
 - (v) HMSA's 2003 contract with KMS is between HMSA and KMCWC's "Medical Group."
 - (vi) Upon her employment with KMS, KW agreed to abide by the rules stated in Kapiolani Health's employee manual, indicating that she was an employee of KH.

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- (vii) There is no indication that KH sought or obtained a determination from third party payers as to whether there existed a common legal entity employing the KMS physicians and the nurse practitioner at issue.
 - (2) There appears to be a “conflict” between the physician attestations listed on the back of a HCFA 1500 and Medicare’s common employment rule.
 - (a) The back side of a HCFA 1500 does not reference the common employment rule. Rather, it indicates only that the ancillary personnel must be employed by the physician for Medicare’s Part B “incident to” billing rules to apply. As noted, however, the common employment rule does allow for physician billing of a non-physician employee when that person and the physician are employed by the same legal entity.
- iii. For purposes of determining whether plaintiffs actually engaged in fraudulent billing to third parties for KMCWC’s pediatric hem-onc. patients, Medicare billing rules are not applicable.
 - (1) There are virtually no Medicare beneficiaries who are KMCWC pediatric hematology-oncology patients.
 - (2) For purposes of determining whether billing fraud was committed, Medicaid (fee-for-service or Quest) and HMSA are the two most common third party payers doing business in Hawaii who reimburse for pediatric hem-onc services.
 - (3) Hawaii Medicaid does not always adhere to HPH’s interpretation of Medicare’s Part B billing rules.
 - (a) Hawaii’s Medicaid program recognizes customary community practice in establishing billing and payment guidelines for physicians’ services.
 - (b) Hawaii Medicaid pays for professional services billed for by a physician who has properly supervised a procedure that was performed by licensed, ancillary personnel who are “clinical employees” of the physician.
 - (i) A “clinical” employee is an individual who would

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customarily assist the physician in the performance of a procedure.

- (4) KMCWC's "Medical Group" contract with HMSA indicates that the nurse practitioner and the (KMS) medical group share a common employer.
 - (a) This is the only HMSA contract for Kapiolani's employed physicians that was produced by Defendants.
- (5) Other third party payers may have rules which differ from Medicare Part B.
 - (a) A statement on the back side of a HCFA 1500 reminds physicians that applicable programs may issue billing instructions which are separate from those listed on a HCFA 1500.
- (6) Compliance counsel, D&T, and HPH did not fully investigate whether non-Medicare, third party payers utilized billing rules or criteria which differed from their own interpretation of Medicare's Part B billing rule.
 - (a) HPH now concedes that a direct inquiry from HPH to the relevant third party payer would have been a more appropriate way to elicit information about different payers' billing criteria.
- b. KMCWC's position that its internal billing rule re. billing for services performed by the nurse practitioner was unambiguous, and equally known to all hem-onc. physicians appears to misstate facts.
 - i. KMCWC recognized that subsequent to March 1999, the alleged billing rule was not clearly understood by the KMS pediatric hematology-oncology physicians.
 - ii. The hard-and-fast billing rule referenced in the Voluntary Disclosure is different from the CBO's actual billing practices from March 1999 - May 2001.
 - (1) Compliance counsel testified that the CBO did not apply its own alleged billing rule.

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- (2) Subsequent to March 1999, HPH engaged in conduct that demonstrates that the billing rule that was actually in place differed from the one which is referenced in the Voluntary Disclosure.
 - (a) In summer 1999, some HPH employees communicated a different billing rule which did not require that the physician solely perform the invasive portion of a procedure.
 - (b) The CBO misapplied the billing rule articulated in the Voluntary Disclosure.
 - (i) 75 percent of D&T's selected sample (27 out of 36) of Dr. Woodruff's bills submitted by the CBO for payment by third parties under Dr. Woodruff's name are cases where the CBO indicated it would not bill.
 - (ii) Approximately 70 percent (5 out of 7) of D&T's sample of Dr. Glaser's bills submitted by the CBO for payment by third parties under Dr. Glaser's name are cases where the CBO indicated it would not bill.
 - (iii) Approximately 80 percent (4 out of 5) of D&T's sample of Dr. Medeiros's bills submitted by the CBO for payment by third parties under Dr. Medeiros' name are cases where the CBO indicated it would not bill.
 - (c) That the CBO consistently misapplied its own alleged billing rule is consistent with a conclusion that the CBO lacked a firm billing policy during the period January 2000 - May 2001.
 - (i) This is also consistent with plaintiffs' contention that Defendants' formulated its position about the billing rule after the hem-onc. compliance investigation had commenced.
- c. Dr. Woodruff appears to have been singled out for what defendants allege to be violations of CBO's alleged billing rule.

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- i. At least three KMS physicians violated the billing rule that was articulated in the Voluntary Disclosure. Among them, only Dr. Woodruff was severely punished.
 - (1) All three physicians wrote their procedure notes in the “third person.”
 - (2) In the Voluntary Disclosure, Dr. Woodruff is (pejoratively) cited for the unique practice of having Diane Fochtman “co-sign” a procedure note.
 - (a) It is equally reasonable to assume that Dr. Woodruff attempted to provide “full information” to the CBO, i.e., she and Diane Fochtman had both performed the procedure, so the CBO could make its own determination whether to bill or not bill a third party.
 - (b) The CBO indicated it billed third parties when only a physician’s signature appeared on a procedure note.
 - (c) If Dr. Woodruff was intent on committing billing fraud, and, assuming she understood the CBO’s alleged billing policy as Defendants’ contend, it is reasonable to conclude that only Dr. Woodruff’s signature would appear on all procedure notes.
 - (i) In fact, Dr. Woodruff’s signature (and no other signature) appears as the only signature only 25 percent of the time (9 out of 36).
- d. A contemporary compliance investigation of billing procedures in the KMCWC emergency department uncovered an even larger amount of inappropriate billings than the hem-onc investigation, but, in that case, the KMS physician responsible received little punishment.
 - i. He remained employed by KMS.
 - ii. Defendants have not indicated to plaintiffs whether the recommended refunds for these inappropriate billings were made to third party payers.
- e. A possible interpretation of KMCWC’s internal correspondence is that the Hospital recognized that it was about to apply a “double standard” to the ED and Hem-Onc Department investigations.

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- f. HPH's position that Dr. Woodruff should have been removed from the KMCWC Medical Staff because she was physically absent during patient "CN's" procedure is not convincing because:
 - i. Dr. Woodruff has testified and will testify at trial that she was present during the procedure.
 - ii. Dr. Woodruff was not interviewed by D&T or compliance counsel.
 - iii. The procedure was not billed by KMCWC's CBO, therefore no actual billing fraud occurred.
 - iv. The KMCWC Medical Executive Committee did not find that Dr. Woodruff had falsified medical records by writing her procedure notes in the third person to imply she was present during the procedure.
- g. At worst, Drs. Wilkinson and Woodruff violated an internal KMCWC billing rule.
 - i. Plaintiffs intend to show that an allegation of misconduct that would lead to termination of employment would warrant due process under the bylaws prior to taking any action.
 - ii. The MEC determined that the appropriate sanction to impose on Dr. Woodruff was to monitor no fewer than 10 cases for appropriate documentation.
- h. A plausible explanation for HPH's investigation and punishment of Drs. Wilkinson and Woodruff is that HPH sought to divert payers' attention from the facility billings associated with the services rendered by an unlicensed nurse practitioner.
 - i. The May 2000 JCAHO accreditation report criticized KMCWC for having inadequate documentation in its personnel files of a number of individuals.
 - ii. Fran Hallonquist testified that JCAHO's citation referred to KMCWC's employment of unlicensed nurse practitioners. She also testified that KMCWC notified JCAHO in November 2000 that it had rectified this problem.
 - iii. The problem, however, had not been corrected during the relevant period.

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- (1) Diane Fochtman continued to practice as an APRN without a Hawaii license.
 - iv. Fran Hallonquist testified that Medicaid would have had an issue with respect to services performed by an unlicensed practitioner.
 - v. Aloha Care testified that its contract with KMCWC requires use of licensed personnel.
 - vi. Kaiser testified that it probably would demand a refund if a hospital employed unlicensed personnel.
 - vii. Repayment of these facility fees probably would have cost HPH far more money than the amount of professional fees (about \$65k) at risk.
 - viii. The facility billings associated with these services are:
 - (1) \$_____ for the four procedures at issue in the hem-onc investigation
 - (2) \$_____ for all services.
 - ix. Compliance counsel's justification for why refunds of facility charges are unnecessary is not convincing.
10. Subsequent to the firing of Dr. Woodruff in January 2002, HPH's conduct vis-a-vis Dr. Woodruff, and its subsequent conduct vis-a-vis HCBCG, has been anticompetitive, and likely motivated to reduce their effectiveness as competitors to KMS's pediatric hematology-oncology physicians.
- a. The physician election form issued to patients in January 2002 was biased.
 - b. KMCWC's explanation for why Dr. Woodruff could not attend to patients who chose a KMS doctor is unconvincing.
 - c. KMCWC would not permit Dr. Woodruff to appear on the call schedule for existing patients.
 - i. Other sub-specialties comprised of multiple physician groups.
 - d. After Dr. Wilkinson and Dr. Woodruff formed HCBCG in April 2002, KMCWC did not distribute new physician-election forms to hematology-oncology patients.

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- e. KMS and Kapiolani physicians were (at least) strongly encouraged to refer new oncology referrals to KMS's hematology-oncology physicians.
 - f. HPH personnel disproportionately referred new hem-onc. patient referrals to KMS hematologists-oncologists.
 - i. There are approximately 40-50 new oncology and serious hematology cases treated by KMCWC each year.
 - ii. A significant fraction of these cases are patients referred to hematology-oncology physicians practicing at KMCWC by HPH personnel.
 - (1) HPH personnel are ER physicians, hospitalists, KMS physicians, and nurses.
 - iii. In late 2003 - first half of 2004, KMCWC acknowledged that a disproportionate share of these referrals were to KMS hematology-oncology doctors.
 - iv. In March 2004, KMCWC instituted a call schedule for "new" hematology-oncology patients. The call schedule was constructed to evenly split new hem-onc patients (who were not direct referrals by non-HPH physicians or employees) between KMS and HCBCG.
 - v. KMCWC's decision to implement this call schedule indicates the Hospital recognized that the prior process used by HPH personnel to refer new hematology-oncology patients to KMS or HCBCG was unfair to plaintiffs.
 - g. To date, KMCWC's instruction, distribution, and compliance with its published "new patient" call schedule has been inadequate.
11. HCBCG has lost new oncology patients because HPH has failed to adopt and properly implement an equitable system of hematology-oncology new patient referrals made by HPH personnel.
- a. There are two types of referrals made to hematology-oncology physicians practicing at KMCWC.
 - i. Direct referrals ("D"), indicating that a non-HPH employee, such as a private practice physician, directly contacts the pediatric hematology-oncology physician of his/her choice.

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- (1) Kaiser patients to Dr. Glaser were treated as direct referrals
 - (2) Patients referred by HPH personnel to KMS hem-onc. physicians, but then referred to HCBCG were treated as direct referrals.
 - (3) Referrals made by Dr. Morita were treated as direct referrals.
- ii. Referrals of HPH personnel (H) to hematologists-oncologists.
 - (1) HPH personnel could be ER physicians, hospitalists, Straub physicians, KMCWC nurses, etc.
- b. During the period April 2002 - October 2005, 149 new pediatric hematology-oncology cases were diagnosed at KMCWC.
 - i. Of these, 98 were direct (D) referrals and 51 were referrals from HPH personnel (H).
- c. Although HCBCG doctors received over 50 percent of D-type referrals made by independent physicians during the period April 2002 - October 2005, they received only 10 percent of the referrals made by HPH personnel over the same period.
 - i. When new Kaiser cases and referrals made by Dr. Morita are not treated as direct referrals, HCBCG receives approximately 72 percent of direct new patient referrals.
- d. KMCWC's policy instituted in March 2004 envisioned that new hem-onc patient referrals made by HPH personnel would be evenly distributed between KMS and HCBCG.
- e. HCBCG lost cases are computed by taking the difference between fifty (50) percent and 10 percent (40 percent) multiplied by the number of HPH-employee referrals of new hem-onc cases diagnosed between April 2001 and October 2005 (51). Hence, during this 3.5 year period, HCBCG lost 20 new patients (0.4×51) diagnosed with significant anemia or cancer.
- f. This estimate of HCBCG's lost cases is conservative because:
 - i. it does not include existing hematology-oncology patients who would have switched to HCBCG from KMS had an updated physician-election form been distributed by KMCWC in April 2002.

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- ii. it does not include lost direct referrals to HCBCG that resulted from defamation.
 - iii. Dr. Morita's referrals to Dr. Glaser are treated as direct referrals rather than referrals from HPH employees.
 - iv. it does not credit Dr. Wilkinson with referrals to KMS made by HPH employees where the independent, referring pediatrician requested referral of the patient to Dr. Wilkinson.
 - v. it does not include lost non-cancer (suspected, but subsequently determined to be benign) cases, or cases of mild anemia which would have been referred to HCBCG had the new-patient call schedule been properly designed and implemented.
- g. HCBCG lost revenue equals lost cases multiplied by actual revenue per case.
- i. Expected revenue per lost case can be divided into two components:
 - (1) expected physician fees generated during active treatment (assumed to be the period which spans 18 mos from the date of diagnosis).
 - (2) expected physician fees generated after active treatment (assumed to be the period which commences after 18 months of the diagnosis date).
 - ii. Expected HCBCG revenue per lost case during active treatment is computed by totaling HCBCG actual received revenues of all new cancer cases diagnosed and referred to HCBCG between April 2002 - October 2004 and dividing by the number of cases. This amount equals \$6,639.
 - (1) The group of new cases which are referrals made by HPH employees is comprised of a higher proportion of AML and ALL patients than HCBCG's actual census of cancer patients. Since HCBCG has obtained most of its cases through direct referral, multiplying its actual, realized average reimbursement per patient by the number of lost patients is probably a conservative estimate of its lost patient revenues.
 - iii. Expected HCBCG lost annual revenues per case after active treatment is computed by taking the simple average of:

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- (1) Total fees received by HCBCG for Dr. Wilkinson's and Dr. Woodruff's patients diagnosed with cancer between March 1998 and October 2000, divided by the number of total months these patients were estimated to be in post-active treatment and multiplied by 12. This figure equals \$392.
 - (a) This period is probably more representative of post-active treatment fees generated during later phases of post-active treatment.

AND

- (2) total fees received by HCBCG of patients diagnosed with cancer between April 2002 - April 2004 for services rendered beginning nineteen (19) months after the month of diagnosis, divided by the number of total months all such patients were estimated to be in post-active treatment, and multiplied by 12. This figure equals \$1335.
 - (a) This period is probably more representative of post-active treatment fees generated during the early phases of post-active treatment.
- (3) Average post-active treatment fees generated during two periods used to measure post-active treatment are estimated to be \$864.
- (4) Additional longitudinal data, not yet received in a readily usable format from Defendants, could affect this estimate.
 - (a) It is reasonable to expect that the average of post-active treatment revenues for the first group of post-active treatment patients (those diagnosed with cancer between 1998 and October 2000) would increase if additional longitudinal data were provided.
 - (b) The addition of these data would likely increase plaintiffs' antitrust damages.
- iv. Average post-active treatment fees are assumed to decline over time as the frequency of annual visits diminishes during the period of post-active treatment.
- v. Lost total revenues are the sum of lost active treatment and lost post-active

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treatment revenues.

- vi. Lost profits equal lost total revenues multiplied by the fraction of lost total realized revenues which are profit, or 0.9.
- vii. Lost profits are presented in both nominal and present value terms.
 - (1) Lost profits incurred during the period April 2002 - April 2006 are increased to current value using a real interest rate varying from 1.2 to 3 percent.
 - (2) Lost profits incurred from April 2006 through March 2011 (the month and year of Dr. Wilkinson's planned retirement) are reduced to current value using a real interest rate equal to 10 percent.
- h. Expressed in present value, antitrust damages equal \$304,746.
 - i. The present value of antitrust damages incurred before April 2006 is \$124,025.
 - ii. The present value of antitrust damages incurred from April 2006 to March 2011 is \$180,721.